

RUT901 DLMS

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Summary

The **DLMS / COSEM** standard suite (IEC 62056 / EN 13757- 1) is the most widely accepted international utility meter data exchange standard. DLMS is the application layer protocol that transforms the data into messages and COSEM describes the general object model and can be used for all kinds of presentations.

This manual page provides an overview of the DLMS functionality in RUT901 devices.

Note: DLMS is additional software that can be installed from the **System** → [Package Manager](#) page. **Note:** The count of DLMS connections is limited to 30, physical devices - up to 30, space groups - up to 10, cosem objects - up to 20 in each group.

Main

The **Main** page is used to configure DLMS physical devices and Cosem Groups.

Notice the Global section config. It is used to outright turn the service off or on if any active configurations are present.



Clicking the Cog icon opens a modal window. The global configuration slider can be set and it's state

saved.



DLMS Physical devices

Interoperable devices in DLMS categorize as server (physical device) and client. Data collection device act as a client that supports system dependent features, parameters, functions and classes requesting data from the server (physical device). In this structure, communication protocol stack is independent of application layer so both devices may communicate different media. To add a new physical device, click the 'Add' button.



After clicking 'Add' you will be redirected to the newly added physical device's configuration page.

DLMS Physical device configuration

The **DLMS Physical device configuration** section is used to configure the parameters of server (physical device).



Field	Value	Description
Enable	off on; default: off	Enables specific physical device configuration.
Connection	empty ; default: none	DLMS connection.
Name	string; default: none	Physical device name.
Server address type	Default Serial number ; default: Default	Select 'Default' for server address or 'Serial Number' for addressing by a specific serial number.
Server address	integer [0..255]; default: 1	DLMS device server address.
Serial number	unsigned integer; default: 1	DLMS device serial number. Uses formula 'SN % 10000 + 1000'.
Logic server address	integer [0..255]; default: 0	DLMS device logical server address.
Client address	integer [0..255]; default: 16	DLMS device client address.
Access security	none Low High High MD5 High SHA1 High GMAC ; default: none	DLMS device authentication type.
Password	string; default: none	DLMS device password if authentication is used.

Interface type	HDLC WRAPPER; default: HDLC	DLMS device interface type.
Transport security	none Authentication Encryption Authentication encryption ; default: none	DLMS device message encryption.
Authentication/Encryption/Authentication encryption: Invocation counter OBIS code	string; default: none	DLMS device invocation counter OBIS code.
Authentication/Authentication encryption: Authentication key	string (Length of the value must be 32); default: none	DLMS device authentication key.
Encryption/Authentication encryption: Block cipher key	string (Length of the value must be 32); default: none	DLMS device block cipher key.
Encryption/Authentication encryption: Dedicated key	string (Length of the value must be 32); default: none	DLMS device dedicated key.
Logical name referencing	on off; default: on	DLMS devices use Logical Names to reference and access specific data objects or attributes during communication. For example, when requesting data from a device, you might reference a specific Logical Name to retrieve the information.
Test	-(interactive button)	Test device configuration.

DLMS Cosem groups

To add a new cosem group, click the 'Add' button.



After clicking 'Add' you will be redirected to the newly added cosem group's configuration page.

DLMS Cosem group configuration

The **DLMS Cosem group configuration** section is used to configure the parameters of cosem groups.





Field	Value	Description
Enable	off on; default: off	Enables Cosem group.
Name	string; default: none	OBIS code group name.

Interval integer [1..4294967295]; default: **1** Interval for OBIS code reading (in seconds).
Test -(interactive button) Test cosem group.

DLMS Cosem value

Cosem value is a specific value retrieved from a defined server (physical device). To add a new cosem value, click the 'Add' button.

 After clicking 'Add' you will be redirected to the newly added cosem value's configuration page.



Field	Value	Description
Enable	off on; default: off	Enables Cosem state.
Name	string; default: none	COSEM option name.
Physical device	selection; default: none	Physical device to read from.
OBIS code	string; default: none	OBIS code value, actions are not executed, only properties are read.
COSEM class id	DATA (ID: 1) REGISTER (ID: 3) EXTENDED REGISTER (ID: 4) DEMAND REGISTER (ID: 5) REGISTER ACTIVATION (ID: 6) PROFILE GENERIC (ID: 7) CLOCK (ID: 8) SCRIPT TABLE (ID: 9) SPECIAL DAYS TABLE (ID: 11) ASSOCIATION LOGICAL NAME (ID: 15) SAP ASSIGNMENT (ID: 17) IMAGE TRANSFER (ID: 18) IEC LOCAL PORT SETUP (ID: 19) ACTIVITY CALENDAR (ID: 20) REGISTER MONITOR (ID: 21) ACTION SCHEDULE (ID: 22) IEC HDLC SETUP (ID: 23) IEC TWISTED PAIR SETUP (ID: 24) UTILITY TABLES (ID: 26) MODEM CONFIGURATION (ID: 27) AUTO ANSWER (ID: 28) AUTO CONNECT (ID: 29) PUSH SETUP (ID: 40) TCP UDP SETUP (ID: 41) IP4 SETUP (ID: 42) MAC ADDRESS SETUP (ID: 43) GPRS SETUP (ID: 45) GSM DIAGNOSTIC (ID: 47) IP6 SETUP (ID: 48) COMPACT DATA (ID: 62) SECURITY SETUP (ID: 64) ARBITRATOR (ID: 68) DISCONNECT CONTROL (ID: 70) LIMITER (ID: 71); default: DATA (ID: 1)	Object type for OBIS code.
Entries	interger [1..32767]; default: none	How many data objects to read.

Connections

The **Connections** page is used to configure DLMS connections. You can use either TCP or serial (depending on the router) connection to establish a connection between the physical device and the router.

DLMS Connections

To add a new connection, click the 'Add' button.



After clicking 'Add' you will be redirected to the newly added connection's configuration page.

DLMS Connection configuration

The **DLMS Connection configuration** section is used to configure the parameters of connections.



Field	Value	Description
Enable	off on; default: off	Enables Cosem state.
Name	string; default: previously added connection name	Name of DLMS connection configuration.
Connection type	TCP ; default: TCP	DLMS connection type.
IP address	ip; default: none	DLMS device IP address for TCP connection.
Port	integer [1..65535]; default: none	DLMS device IP port for TCP connection.
Persistent	off on; default: off	Open TCP connection once and reuse it between requests.